IMMUNOLOGY
Integrated Review Group
Guidelines and Shared Interests

The Immunology (IMM) IRG reviews applications that seek an understanding of the immune system's role in hosts' interactions with infectious agents, tumor cells, transplanted cells, self components, the conceptus/fetus, allergens, and environmental exposures; mechanisms, preventions and treatments of diseases when the immune system has a major role; the evolution, comparative biology, development, structure, aging and malfunction of the immune system; the molecular, cell, organ and organismal biology of the immune system; the biophysical and structural analysis of antigens and immune system products and components; the interactions of the immune system with other organs, such as the nervous and endocrine systems; and the participation in immunity by non-lymphohematopoietic tissues and cells, such as epithelia.

The following study sections are included within the IMM IRG:

1. Innate Immunity and Inflammation (III)
2. Immunity and Host Defense (IHD)

3 and 4. Cellular and Molecular Immunology (CMI) A and B

5. Hypersensitivity, Autoimmune, and Immune-mediated Diseases (HAI)
6. Transplantation, Tolerance, and Tumor Immunology (TTT)

These recommended study sections may be viewed as three pairs: a pair for fundamental issues in innate and infection-related immunity (III and IHD), a pair for fundamental issues in adaptive immunity (CMI A and B), and a disease/clinical pair (HAI and TTT). Thus, most immunology applications should have two potential review homes. Based on a mock referral of May 2000 applications, each of the study sections is expected to be well populated with primary assignments.

In addition, the IMM SSB Team recommended formally that separate study sections be retained for review of fellowship and small business (SBIR) applications.

Special remarks

Growth in workload and changes in scope. Rapid growth is anticipated in the number of applications suitable for review within the IMM IRG, specifically in the areas of host-pathogen relationships, autoimmunity and transplantation immunology. To handle the anticipated increase, the number of study sections within the IMM IRG may soon need to be increased beyond the six recommended. One way to do so quickly would be to duplicate one or more of the sections, perhaps fostering some specialization within the replicate sections. However, the IMM SSB Team recommended that the expedient of duplicating sections not take the place of ongoing periodic review of study sections from the point of view not only of workload, but also of scope and performance. With the acceleration of changes in the course of science, it can be anticipated that the study section structures proposed herein may become conceptually constraining within the next 5-10 years quite apart from any increase in the number of applications.

Clinical investigation. The IMM SSB Team gave particular attention to the issue of clinical investigation in immunology. At least two study sections (Hypersensitivity, Autoimmune, and Immune-mediated Diseases and Transplantation, Tolerance, and Tumor Immunology) were recommended in which the proportion of applications involving some aspect of clinical investigation is expected to approach 30%. Applications on immunological subjects that involve

clinical investigations should be reviewed in one of these two study sections unless compelling reasons determine otherwise. Rapid growth in the number of applications dealing with host-pathogen relationships, infection, immunity, and vaccines may make it feasible and advisable in the future to designate a third such study section within the IMM IRG.

Redistribution of applications previously reviewed in other IRGs.
(i) Transplantation immunology. The IMM SSB Team felt strongly that it will benefit the science of transplantation immunology and therefore the health of the public if the majority of applications are reviewed in the IMM IRG that deal with transplantation from a largely immunological perspective, regardless of the organs, tissues or cells transplanted. It was the Team's further view that applications in the field of transplantation immunology will benefit from being reviewed in the context of research on tolerance and tumor immunology, and reciprocally, that applications in the latter fields will benefit from being reviewed in the same IRG with those in transplantation immunology.
(ii) Autoimmune diseases. Following the same logic, the IMM SSB Team felt that science and therefore the health of the public will be best served if applications dealing predominantly with immunologic aspects of autoimmune disease are reviewed in the IMM IRG, whatever the organs or tissues affected by the disease in question. However, since the scientific basis at the present time of fibromyalgia and chronic fatigue syndrome is unclear, the Team recommended that applications dealing with fibromyalgia or chronic fatigue syndrome only be reviewed in the IMM IRG if they specifically focus on the immune system.
(iii) Host-pathogen relationships. The primary function of the immune system is to defend the host against infection. Conversely, the primary manifestation of immunodeficiency is failure to control infection. Thus, while applications dealing with specific infectious diseases are in many cases best reviewed in IRG 11, Infectious Diseases and Microbiology, those concentrating on the interactions of the host's immune system and the pathogen should be reviewed in the IMM IRG. HIV/AIDS remains excepted from the purview of the IMM IRG because the magnitude of the problem has led to the constitution of a special set of study sections to deal with it.

1. INNATE IMMUNITY AND INFLAMMATION (III) STUDY SECTION

The Innate Immunity and Inflammation study section reviews applications involving basic aspects of innate immunity and inflammation, including studies of soluble and cellular mediators of these processes.

Specific areas covered by III include:

- Animal and plant systems of innate immunity and animal systems of inflammation.
- Development, activation, and evolution of effector functions of innate immune cells including NK cells, phagocytes, gamma/delta T cells, B-1 cells, dendritic cells, and mast cells. Included are studies of phagocytosis, production of reactive oxygen and nitrogen intermediates, cytokine synthesis, cytolytic mechanisms, effector cell replication and death, and natural antibodies.
- Biochemistry, molecular and cell biology of pattern recognition receptors and ligands including Toll-like receptors, G protein coupled receptors, phagocytic receptors, scavenger receptors, Fc receptors, NK receptors and related molecules, and complement receptors.
- Inflammatory and anti-inflammatory cytokines and chemokines, lipid mediators and other autacoids, and their receptors. Included are studies of regulation of expression, structure-

function relationships, target cell responses, receptor signal transduction, and biologic roles of these molecules.
- Complement and other soluble host defense proteins and their regulation.
- Immunodeficiencies involving the inflammatory and innate immune systems.
- Recruitment and activation of non-lymphocyte leukocytes utilizing mechanisms including adhesion molecules, chemotaxis and related phenomena, and endothelial responses.
- Structure, function, and release of anti-microbial peptides, for example defensins.
- Systemic and tissue specific responses to inflammation, including acute phase proteins, tissue/cell injury, repair and remodeling.
- Initiation of host responses in skin and mucosal sites by innate immune mechanisms.
- Mechanisms of the regulation of adaptive immune responses by innate immune mediators and their receptors.
- Innate immune reactions in privileged sites, such as eye, reproductive organs, and brain.

Shared Interests Within the IMM IRG:

- Immunity and Host Defense (IHD): If the primary focus of an application is innate immunity in relation to a specific pathogen, assignment should be to IHD. If the primary focus of an application is innate immunity in general, assignment should be to III.
- Hypersensitivity, Autoimmune and Immune Mediated Diseases (HAI): If the primary focus of an application is on disease-specific inflammation or innate immune function, assignment should be to HAI. In addition, if the primary focus of immunodeficiencies is on lymphocytes and other cells of the adaptive immune response, assignment should be to HAI.
- Cellular and Molecular Immunology (CMI): If the primary focus of the application is antigen-specific adaptive immunity, assignment should be to CMI.

Shared Interests Outside the IMM IRG:

- IRG 11 (Infectious Diseases and Microbiology): Applications focusing on the pathogen should be reviewed in IRG 11. Applications focusing on host-pathogen interactions or the host response to pathogens should be reviewed in IMM (IRG 10).
- IRG 12 (AIDS and Related Research): Applications focusing on the immune response to HIV should be reviewed in IRG 12.
- IRG 15 (Cardiovascular Sciences): Applications focusing on endothelial cell activation should be reviewed in IRG 15. Applications focusing on leukocytes should be reviewed in IRG 10.

2. IMMUNITY AND HOST DEFENSE (IHD) STUDY SECTION

The Immunity and Host Defense study section reviews applications involving host defense, systemic and mucosal immunity and vaccines against microorganisms.

Specific Areas Covered by the Immunity and Host Defense study section include:

- Host-microbe interactions: Innate and acquired host immune responses to specific pathogenic organisms including viruses, bacteria, fungi and parasites; host responses to commensal microbes; host factors, including genetic predisposition or resistance to

infection; and exogenous factors, such as adjuvants that provide protection from infection and limit toxicity.

- Innate immunity to microorganisms: Cells, receptors, cytokines, chemokines, and soluble mediators that provide early protection from injury due to pathogens and their products or responses to commensal organisms. Innate immune cells include but are not limited to NK cells, phagocytes, gamma/delta and NK T cells, B-1 cells, dendritic cells, and mast cells. Receptors include but are not limited to molecules that are expressed by these cells and are used in innate immunity, including chemokine and other G-protein coupled receptors, Toll-like receptors, NK cell activation and inhibitory receptors, phagocytic receptors, pattern recognition receptors, Fc receptors, adhesion receptors, co-stimulatory molecules, and cytokine receptors.
- Mucosal immunity: Host immune responses in mucosal sites to specific pathogens, including viruses, bacteria, fungi and parasites and regulation by commensal microbes. Topics include but are not limited to induction and modulation of mucosal immune responses. Studies of mucosal vaccines and responses include adjuvants, delivery systems for vaccine components, comparison of mucosal immunity versus systemic immunity, differentiation of immune responses in the mucosa and peripheral lymphoid tissues, and immune cell migration to mucosal sites, including inductive and effector sites.
- Host defense: Innate and acquired immune responses that protect the host from deleterious effects of pathogens, including basic mechanisms of immune responses to limit pathogen invasion and toxicity, and development of animal models of potential bioterrorism agents.
- Vaccines and adjuvants: Preclinical development of strategies to protect the host from pathogens and their products by enhancing the host innate and acquired immune system capacity. These strategies include specific antigens, attenuated microorganisms, recombinant viral and bacterial vectors, DNA vaccines, agents that enhance immune responses, cross-protective components, and relevant animal models of disease.
- Immune response to gene therapy agents: Immune responses that limit the effectiveness of treatment through gene transfer, including response to gene therapy vectors and gene products.

Shared Interests within the IMM IRG:

- Innate Immunity and Inflammation (III): If the primary focus of an application is innate immunity in general, assignment should be to III. If the primary focus of an application is innate immunity in relation to a specific pathogen, assignment should be to IHD.
- Hypersensitivity, Autoimmune, and Immune-mediated Diseases (HAI): Applications dealing with inflammation of the lung and airway epithelium and with immunologic aspects of digestive sciences, including inflammatory bowel diseases, should be referred to HAI.

Shared Interests Outside the IMM IRG:

- IRG 11 (Infectious Diseases and Microbiology): Applications dealing with host-pathogen responses should be assigned to IRG 11 if the application focuses primarily on the pathogen rather than the host immune response or host-pathogen interactions. Applications dealing with host-pathogen responses should be assigned to IHD if the application focuses primarily on the host immune response or host-pathogen interactions.
- IRG 12 (AIDS and Related Research): Applications dealing with HIV and HIV vaccine development should be assigned to IRG 12.

3 & 4. CELLULAR AND MOLECULAR IMMUNOLOGY A AND B (CMI) STUDY SECTIONS

The two Cellular and Molecular Immunology study sections review proposals that investigate the biochemical, cell biological and genetic processes that regulate the development, survival, death, activation and function of lymphocytes and other cells of the adaptive immune system. The two study sections are to be considered as interchangeable, with a few areas of specialization in each.

Subjects to be reviewed by either study section include:

- Gene regulation during lymphocyte development, differentiation or response to environmental signals or cytokines.
- Lymphocyte development and differentiation from hematopoietic precursors.
- The selection of lymphocyte repertoire during development and during responses to antigen. The mechanisms and regulation of VDJ recombination of TCR and Ig genes, isotype switching and the somatic hypermutation of immunoglobulin genes.
- The differentiation of naive lymphocytes into specialized effector cells and long-lived memory cells.
- Molecular and biochemical aspects of lymphocyte activation induced by antigens, hormones, cytokines and costimulatory molecules.
- Lymphocyte homeostasis including the survival and persistence of peripheral B and T cells. This area would be expected to include studies on thymus and bone marrow output and lymphocyte competition in peripheral lymphoid organs.
- Basic mechanisms of myelo- and lympho-poietic cell cycle, growth control, and death.
- Lymphocyte homing, migration, and chemokines. Regulation of expression and function of cell adhesion, inhibitory, chemokine receptors. Lymphocyte migration and localization within secondary lymphoid organs and non-lymphoid tissues. Interactions of lymphocytes with endothelium. Signal transduction pathways and cellular processes regulating lymphocyte migration, including cell polarization and cytoskeletal reorganization.
- Genesis of lymphoid organs.
- Antigen processing and presentation. Antigen recognition by T cells. Structural and functional investigations of classical and non-classical MHC molecules and their ligands. Pathways involved in antigen uptake, internalization, and intracellular processing. Investigation of the function of different antigen-presenting cell types and mechanisms that regulate antigen presentation function by dendritic cells, B cells, macrophages and other antigen-presenting cell types.
- Interface between innate and adaptive immunity, including studies in nontraditional model systems, the effects of innate immunity on the function of antigen presenting cells and lymphocytes as well as the actions of adjuvants.
- Intracellular signaling, including studies on the composition, assembly and function of signal molecules involved in antigen-specific immune responses. Visualization of signal molecule conformational change and module assembly and translocation. The biochemistry of a diverse set of second messengers including lipid mediators, reactive nitrogen and oxygen species. Intercellular signaling through cell-to-cell contact, cytokines, small lipid mediators.

Areas specific to individual study sections include:
Cellular and Molecular Immunology A

- Biophysical analysis. Three-dimensional structure determination of immune system molecules, and their complexes, by x-ray crystallography and nuclear magnetic resonance.

Examples of appropriate targets include antibodies, T cell receptors, MHC and MHC-like molecules, NK receptors, accessory/costimulatory molecules, cytokines and cytokine receptors, and signaling proteins. Characterization of the interactions between these molecules using biophysical techniques such as surface plasmon resonance, analytical ultracentrifugation, calorimetry and mass spectroscopy.

- Engineering antibodies and other proteins for immunotherapeutic, analytic or diagnostic applications. Development and application of novel biophysical methods for characterization of immunological systems.
- Cell biology. Investigations of basic aspects of cell biology as they relate to immune cell function, including the role and regulation of post-translational modifications, intracellular sorting and trafficking of molecules and vesicles, endocytosis and recycling of membranes, structure and function of membranes and membrane microdomains. Studies directed at elucidating structure/function relationships of supramolecular structures and organelles including cytoskeleton, nuclear matrix and envelope as they impact specific aspects of lymphocyte function.

Cellular and Molecular Immunology B

- Immune deficiencies. Identification and characterization of genetic disorders of the immune system that influence lymphocyte development, activation or differentiation.
- Applications of genome-based information in resolving fundamental aspects of the control of expression of genes governing adaptive and innate immune responses. Computational as well as other experimental approaches directed at understanding the function of individual genes, multi-gene families, genome regulatory networks/circuits, and protein-protein or cell-cell interactions are included. Investigations of the translation of genetic information to protein structure and other aspects of proteomics relating to basic immune mechanisms are within the scope of this review group.

Shared Interests Within the IMM IRG

- Innate Immunity and Inflammation (III): Studies at the interface of innate immunity and antigen presentation will overlap with III, as will studies focusing on inflammatory chemokines and leukocyte migration into inflammatory sites. However, studies that focus on NK receptor signaling should be assigned to III.
- Hypersensitivity, Autoimmune, & Immune-mediated Diseases (HAI): Studies of immune deficiencies not directly involved in defects of the lymphoid compartments should be assigned to HAI. Specific gene polymorphisms altering the function of the immune system and leading to an autoimmune or inflammatory disease or to immunodeficiency are to be reviewed by HAI.
- Cell signaling pertaining to immune disorders should be reviewed in III or HAI; whereas basic signaling molecules and pathways should be reviewed in CMI A & B.

Shared Interests Outside the IMM IRG:

- Studies of signal transduction and cell death in cells involved in various diseases and inflammation might be reviewed by the Study Sections devoted to the particular condition to be studied. Similarly, the structures of some molecules might be better reviewed in the context of the cells or processes to which the molecule contributes, e.g., some cytokines and inflammation.
- IRG 1 (Biological Chemistry & Macromolecular Biophysics): CMI A will have shared interests with IRG1 in areas of structural biology. If the focus is immunology, review should

be in CMI A unless the biophysical technique is esoteric, e.g., use of crystallographic and nuclear magnetic resonance approaches are broadly used and should be expertly and fairly reviewed by CMI A.

- IRG 2 (Molecular Approaches to Gene Function): Studies of gene expression in lymphocytes may overlap with the interests of IRG2. If the focus is gene expression in the context of immunology then review should be in CMI A/B.
- IRG 3 (Molecular Approaches to Cell Function & Interactions): Studies on gene expression and signal transduction may also overlap with the interests of IRG3. If the focus is cell biology in the context of immunology then review should be in CMI A/B.
- IRG 14 (Hematology): CMI A & B will have shared interests with IRG 14 in areas related to hematopoiesis. If the thrust of the study is immunological, involving myelo- or lympho-poiesis, assignment to CMI is appropriate. If the thrust is red blood cell or platelet production, then assignment to IRG 14 is appropriate.

5. Hypersensitivity, Autoimmune, and Immune Mediated Diseases (HAI) Study Section

The Hypersensitivity, Autoimmune, and Immune Mediated Diseases study section reviews applications from basic, pre-clinical, and clinical investigators involving the etiology, initiation, immunopathophysiology, prevention and treatment of diseases in which the immune system (innate and adaptive) is the major contributor. This includes autoimmune diseases, hypersensitivity and allergic diseases, asthma, primary and secondary states of immunodeficiency (non-AIDS), and inflammatory diseases.

Specific areas reviewed by HAI are:

- Immune-mediated disease etiology, including genetic, developmental, hormonal, environmental factors (infectious and non-infectious) and lifestyle factors.
- Immune-mediated disease initiation, including activation of innate and antigen specific responses, cytokine regulation/polarization, regulatory cells and recruitment of inflammatory cells.
- Immune-mediated disease immunopathophysiology, including the balance of effector and regulatory factors and cells as well as mechanisms of tissue damage leading to chronicity, remission or relapse, and genetic and exogenous factors modulating disease expression.
- Immune-mediated diseases that arise as a consequence of aging.
- Immune-mediated disease treatment, including antigen specific and non-specific drug and biologic approaches to tolerance to self or foreign antigens including vaccination, gene therapy, peptide and altered ligand approaches as well as cell based approaches; development of biomarkers of disease and its activity, and outcome assessments in clinical studies; determinants of response to therapy.
- Immune-mediated disease prevention, including identification of at risk populations, immuno-epidemiology of genetic and environmental factors, and interventions aimed at altering immune response so as to modify or prevent disease expression.

Approaches include human studies, in vitro studies of patient materials, animal models, and genomic and proteomic approaches to immune-mediated disease questions. This would include structural studies of antigenicity of allergens and autoantigens and interaction of the nervous and endocrine systems and the immune system in immune-mediated disease.

Examples of appropriate diseases reviewed by HAI are:

- Allergic diseases including those leading to anaphylaxis, allergic rhinitis, sinusitis, and allergic reactions to foods.
- Investigation of lung diseases including hypersensitivity, pneumonitis, and the immune, inflammatory, and allergic elements of asthma, including asthma occurring in the occupational setting.
- Autoimmune diseases such systemic lupus erythematosus (SLE), rheumatoid arthritis (RA), type I diabetes, multiple sclerosis, and anti-phospholipid syndrome.
- Inflammatory disorders such as inflammatory bowel diseases, vasculitis (polyarteritis), and innate inflammatory disorders such as familial Mediterranean fever (FMF) & Behcet's.
- Age related changes in phenotype and function of T cells, B cells, and memory cells, including vaccine responses.
- Primary and secondary immunodeficiencies including damage to the immune system from exogenous agents.

Shared Interests within the IMM IRG:

- Innate Immunity and Inflammation (III): Applications that focus on modulation of allergic and autoimmune disease by antigen delivery via the mucosal immune system should be reviewed by HAI.
- Immunity and Host Defense (IHD): Applications that focus on the host pathogen relationship as they primarily relate to initiation of an immune-mediated disease by microbial exposure/infection should be reviewed by HAI.
- Cellular & Molecular Immunology A & B (CMI A & B): Applications where studies of normal and abnormal development relate to immunodeficiency are of shared interest with HAI. While most structural studies of immune system components should be reviewed in CMI A, studies of allergens and autoantigens are a shared interest.
- Transplantation, Tolerance, and Tumor Immunology (TTT): Studies of repertoire selection and tolerance induction are more appropriate to TTT. Applications on immunotherapy, autoimmunity and tolerance will complement the disease directed studies in HAI. Bone marrow transplantation in autoimmune disease is of interest to HAI.

Shared Interests Outside the IMM IRG:

- IRG 15 (Cardiovascular Sciences): Shared interests with HAI are studies of the mechanism of vascular damage and interaction between immune cells and endothelium. While general studies of vascular inflammation should be reviewed in IRG15, specific studies directed at vascular aspects of immune mediated diseases should be reviewed in HAI.
- IRG 16 (Endocrine, Metabolism, & Reproductive Sciences): Shared interests are studies of immunologic aspects of endocrine disease including type I diabetes. When primarily directed at the immune processes involved, applications should be reviewed in HAI.
- IRG 17 (Musculoskeletal, Oral, and Skin Sciences): Studies of animal models and clinical aspects of diseases of joints and connective tissues, including systemic lupus erythematosus, rheumatoid arthritis, Sjogren's, vasculitis and other inflammatory disorders are appropriately assigned to HAI when they address immunologic disease etiology, initiation, immunopathophysiology, treatment, and prevention. Some studies of end organ damage in immune-mediated disease should be assigned to IRG17.
- IRG 18 (Digestive Sciences): Shared interests include immunologic aspects of bowel disease including inflammatory bowel disease. When primarily directed at the immune processes involved, applications should be reviewed in HAI.

- IRG 19 (Pulmonary Sciences): Shared interests include inflammatory lung disease. Studies of lung diseases, including asthma, where the immune, inflammatory and allergic elements are investigated should be assigned to HAI.
- IRG 23 (Integrative, Functional, & Cognitive Neuroscience): Neuroendocrine interactions with the immune system are of interest to HAI when altered immunity is involved. Where damage to the nervous system via immune mediated mechanisms is the focus, HAI should be assigned the review.
- IRG 24 (Brain Disorders & Clinical Neuroscience): Shared interests include studies of inflammation in the nervous system. Where damage to the nervous system via immune-mediated mechanisms is the focus, HAI should be assigned the review.

6. TRANSPLANTATION, TOLERANCE, AND TUMOR IMMUNOLOGY (TTT) STUDY SECTION

The Transplantation, Tolerance, and Tumor Immunology study section reviews grant applications from basic, pre-clinical, and clinical investigators involving transplantation, tumor immunology, and cellular and molecular mechanisms of immunoregulation as they impact transplantation, self-tolerance, or effective tumor immunity.

Specific areas covered are:

- Transplantation: TTT will review applications focused on all immunologic aspects of the rejection (acute or chronic) of transplanted organs, tissues and cells, in animal models and humans, including: clinical tissue transplantation procedures, the development of xenograft procedures, bone marrow reconstitution, and stem cell engraftments. In addition, TTT will review applications investigating: strategies for the development of transplantation tolerance in clinical settings, for example the induction of anergy to grafts and cells, mechanistic studies of immunosuppressive agents, the manipulation and suppression of graft versus host disease, immunity to pathogens in transplantation, and the role of major and minor histocompatibility antigens in survival of organ transplants.
- Tolerance: The TTT study section will review applications that investigate the fundamental immunologic mechanisms maintaining and breaching tolerance to self and novel antigens. This would include: the characterization and manipulation of regulatory immune cells and molecules, strategies for inducing tolerance to organ transplantation, characterization of cellular interactions that promote and suppress the induction of immune responses, mechanisms of immune regulation or tolerance as applied to autoimmunity or autoimmune disease, and cellular and effector mechanisms that regulate immunity against tumors and organ transplants and recombinant proteins.
- Tumor immunology: TTT will review applications focused on the identification and characterization of tumor antigens, the induction of immune responses to tumors, tumor vaccine development, and strategies for the immunotherapy of cancer, including the induction of specific effector cells and molecules. In addition, TTT will be appropriate for applications on mechanisms of immune evasion and immunosuppression by tumors, bone marrow transplantation as an element in cancer therapy, and the regulation of deleterious autoimmune responses during anti-tumor therapies.

Shared Interests Within the IMM IRG:

- Cellular & Molecular Immunology A & B (CMI A & B): TTT shares interests with CMI A & B regarding the development of immune (both self and foreign antigen) tolerance.

Applications studying the mechanisms of tolerance induction during lymphocyte development will be reviewed by CMI A & B, while immunoregulatory mechanisms of maintaining self-tolerance will be reviewed in TTT.

- Hypersensitivity, Autoimmune, & Immune-mediated Diseases (HAI): TTT shares an interest with HAI in the development of autoimmunity. TTT will focus on fundamental issues of tolerance while HAI will focus on specific autoimmune diseases.

Shared Interests Outside the IMM IRG:

- IRG 13 (Oncologic Sciences): TTT has a shared interest with IRG 13 in the area of tumor immunology. TTT will review applications that are focused on the basic and pre-clinical aspects of tumor immunology, for example animal models of cancer, while IRG 13 will focus on pre-clinical and translational applications. TTT also shares an interest with IRG 13 in the area of bone marrow transplantation.
- IRG 14 (Hematology): TTT has a shared interest with IRG 14 with regard to bone marrow transplantation. If the principal question is immunological, then TTT is the appropriate review assignment. If the principal question is red blood cell and platelet production, then IRG 14 is the appropriate review assignment. Myelopoiesis is an area of shared interest between the IMM and HEM IRGs.
- IRG 21 (Surgical Sciences, Biomedical Imaging, & Bioengineering): TTT has a shared interest with the Surgery, Surgical Critical Care, and Transplantation: Systems and Tissue Aspects of Surgery (STAS) study section of IRG 21. Both study sections express interest in reviewing organ, tissue and cellular transplantation. The IMM SSB Team believes that review of transplantation immunology within the IMM IRG is more appropriate than within IRG 21. Scientifically, TTT has more cohesion, and applications involving immunoregulatory aspects of transplantation immunology can be grouped with other applications on regulated immune responses. However, some transplantation applications are not appropriate for review in TTT. Specifically, applications that are focused on non-immunological questions such as organ preservation and organ allocation should be clustered for review and perhaps STAS would be an appropriate study section.
- TTT has the potential of overlap with several other study sections if transplantation is segregated on the basis of organ system. The IMM SSB Team strongly endorses the principle that transplantation immunology applications should be reviewed in IRG 10 (Immunology). The Team recognizes that some transplantation applications are truly directed at organ-specific issues. Such applications should be reviewed in the appropriate organ-specific study sections. The Team believes that most transplantation applications are not organ-specific, but rather address questions that are related to the immune response of the recipient and its modification.